Pedaling through the Pandemic: Countermapping through Cycling and Rethinking Safety and Safe Spaces for Cyclists in the "New Normal"

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The COVID-19 pandemic had a significant impact on people's everyday lives in the Philippines. Various means of public transportation in particular were halted as strict quarantines and physical distancing measures were imposed in the government's attempt to curb the rising number of cases in the country. Employees therefore needed alternative modes of transportation to be able to move, get to work, and engage in various means of livelihood especially in urban settings. The bicycle of course was one of the alternatives leading to a somewhat pandemic-induced bicycle boom from the years 2020 to 2021. The rising interest in cycling also put to fore issues and concerns regarding cycling safety prompting government agencies and Local Government Units to establish policies aimed at protecting individuals who will be using cycling as a means of transportation during the pandemic. Despite the temporary improvements in policy, the continuation and sustainability of such measures beyond COVID remains a question considering that there are already ten cycling related bills pending in Congress since 2011 signifying the lack of prioritization in terms of implementation. Furthermore, these said laws perpetuate an built-environment-centric ideas of safety spaces for cycling that eventually influence mapping practices wherein bike lanes along major

routes and bike shop locations are prioritized. This undermine significant elements that should also be factored in the creation and mapping of safe spaces for cycling in the Philippines: the Filipino cycling community and culture.

This paper therefore interrogates the idea of safe spaces for cycling in the new normal by going beyond built-environments for cycling and emphasizing the importance of understanding the Filipino cycling community and culture and how cycling can be used as a method in countermapping urban and rural spaces. This includes a review of literature on the inter-relationship of cycling culture, mapping, and policy as well as discussions on how the bicycle is part of the network of Filipino cyclists influencing the formation of various types of cycling community, cultures, and perceptions of safety. Auto-ethnographic and participatory observation approaches is utilized since the author is also a part of the cycling community.

Keywords: *Bicycle, Safe Spaces for Cycling, Built Environment, Cycling Community/Culture, Countermapping*

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Introduction: The Pandemic-induced Bicycle Boom in the Philippines

The COVID-19 pandemic officially reached the Philippines on January 22, 2020 via a tourist who arrived in the country from Wuhan, China (DOH, 2020a). By March 5, local transmission was detected by the Department of Health (DOH) and Metro Manila was put into a lockdown in the government's attempt to control the spread of the virus (DOH, 2020b; Salem, 2020). With the number of cases rising throughout the archipelago, the whole country was eventually put into lockdown with the intensity and stringency determined by alert levels.

Public transportation was one of the sectors that suffered forcing people to explore alternative means of moving around for work, access to essential goods and services, and exercise. Biking became one of the cheapest and most popular alternative leading to a pandemic-induced bicycle boom as bicycle users increased out of necessity (Romualdez, 2020).

A renewed interest in cycling eventually called for a renewed discourse on the issue of cycling safety in the country as more people experience the harsh realities of biking in the road. The immediate response of various government agencies and local government units, especially in Metro Manila, is to establish temporary policies regarding cycling safety as well as improve built environments such as bike lanes to ensure that bicycle users will have an easier way around urban spaces. Department of Interior and Local Government (DILG) Memorandum Circular 2020-100, enacted on July 17, 2020 for example, aimed to establish and improve networks of cycling. A Joint Administrative Order No. 2020-0001 was also put into effect on August 19, 2020 by the DOH, Department of Transportation (DOTr), DILG, and the Department of Public Works and Highways (DPWH)

urging the promotion of active transport, which includes cycling, during and after the pandemic.

On the part of the Filipino cycling community, OpenStreet maps were launched by concerned members and groups of the community namely Life Cycles PH and MNL Moves to be able to democratize the sharing of hazard data, and road and bike lane conditions in the Philippines for newcomers and experienced cyclists alike (Gutierrez, 2021).

While these improvements were welcome developments for cyclists in the country, these shifts in policies also exposed the years of neglect that stems from the poor urban planning, traffic mismanagement, and the lack of actual laws that outline how cycling safety should be observed not only by various government agencies but all road users as well. Numerous cycling-related bills are still pending in Congress since 2011.

The sudden prioritization of cycling during the COVID-19 pandemic raises the question on whether any one of these bills will be finally enacted as well as the continuity of policies beyond the pandemic as road conditions gradually return to normal. The OpenStreet map for Filipino cyclists on the other hand offer possibilities and opportunities in mapping cycling safety and safe spaces for cycling further creating a data-base that is accessible, democratic, and representative of the Filipino cycling community's character and experience.

This paper therefore interrogates the concept of cycling safety and safe spaces for cycling in the Philippines by reviewing trends in academic studies and literature, and thinking of ways by which the OpenStreet map can be further improved to cater to the needs of different cycling communities in the country. Valuable resources in this regard are cycling safety-related studies and countermapping through cycling, the OpenStreet map applications developed by

different cycling groups and individuals, online forums about cycling culture and safety, as well as my personal experiences as a member of multiple cycling groups and engagements with the cycling community for the past 17 years.

By rethinking the idea of cycling safety and safe spaces for cycling in the Philippines, I argue that the cycling community is not just a homogenous community but rather a diverse one that is based on varying levels of Filipino cyclists' entanglement with the meaning of cycling, degree of cycling competencies, and materials used in cycling. This means that there are also multiple ways by which cycling safety and safe spaces for cycling is perceived and understood in the country giving depth into the idea that safety is just simply going from point A to point B without incident. This may contribute to the creation of a more inclusive urban planning and policy for cycling safety as well as in the construction of built environments that provide safe spaces for cycling. It may also influence the way we perceive urban and rural spaces, road safety, and inclusivity, therefore changing the way we understand, produce, and map cycling spaces.

Rethinking Cycling Safety and Safe Spaces for Cycling: A short Review of Literature

In 2020, the World Health Organization released an information resource manual for decision-makers regarding cycling safety. In the said manual, cycling safety of course meant the prevention of cycling accidents, injuries, hazards, and fatality. Aside from emphasizing the need to address the issue of cycling safety as well as the risk factors related to cycling, it also enumerated the proven and promising interventions as well as those with insufficient and weak evidence.

Proven and promising interventions include safer urban designs, roads, vehicles, and road users. Basically, proven interventions are focused on improving and integrating cycling networks with main arteries of roads as well as regulating the top speed of motorized vehicles within urban spaces. Interestingly, not all interventions involving built structures are classified as proven especially those that are located on off-road tracks. The efficacy of education and communication programs, or those dealing with intangible and subjective aspects of cycling and road safety, were also cited as lacking research and evidence (Auert et al., 2020).

Various academic studies on cycling safety however show that aside from built environments, subjective aspects such as a cyclist's perception of hazards as well as the prevailing community perception of cycling and the existing cycling culture in a certain place are important factors that determine if an area is safe for cyclists. To start, Robert Bauer, Petros Evganikos, George Yannis, and Katerina Folla (2016) defined cyclists as:

> "...a special groups of road users, with increasing numbers and different needs and characteristics than other road users mainly due to their vulnerability, but also to their mobility behaviour. The safety problem for cyclists vary systematically by region, reflecting different climates, cultures, and behavioral characteristics, intensity of traffic, modal shares, levels of cycling infrastructure development, and technology readiness levels."

The act of cycling in itself is a benign activity which therefore becomes dangerous when it takes place in dangerous situations such as in major routes where different types of road users are found consequently exposing the cyclists to various risks and hazards. Real and perceived danger and feelings of discomfort in return are highly related to the overall motor traffic situation of a particular

context and is one of the main factors that encourages or discourages people from engaging in cycling (Jacobsen and Rutter, 2012).

The study conducted by the team of Dr. Meghan Winters (2012) in their article "Safe Cycling: How Do Risk Perceptions Compare with Observed Risks" give proof to these findings as their research also showed a strong correlation between perceptions of safety and observed safety especially in main routes that are usually taken by cyclists and other road users. Risks and hazards are more associated with shared paths, especially on roads shared with motor vehicles, as compared to separate and off-road routes. Risks and hazards on separate tracks however were still seen as significant depending on the experience of cyclists travelling such routes hence the importance of considering other subjective factors especially how various types of cyclists assess their safety on main and off-road routes. The team further suggested the use of education programs and social media as a means of informing the public regarding both perceived risks and observed safety on various types of cycling routes as a form of intervention.

Aside from the importance of risk perceptions, the study conducted by Francisco Alfonso, Luis Montoro, Jaime Sanmartin, and Sergio Useche (2019) also showed another important factor that should be considered in the discussion of cycling safety. In their study, they surveyed various participants around the world and identified factors that might encourage or discourage from actually engaging in cycling as a leisure activity or a means of transportation. One of the frequent reasons mentioned is the lack of a cycling culture and tradition as well as respect for cyclists signifying a more cultural and community-level aspect of cycling safety.

With these results from these studies in mind, cycling safety can therefore be defined as a combination of observable safe built environments as well as perceived risks and safety as mediated by individual and community experience, culture, and

tradition. Cycling safety as an artefact of traffic safety therefore necessitates the need not only for single interventions but also the accumulation of individual and collective action (Jacobsen and Rutter, 2012). The idea of safe spaces for cycling by extension should not just be understood as the mere presence of infrastructure but also the continuous interplay between the concrete or the physical and the abstract or the cycling community's experience, understanding, and negotiations of space (Mayers and Glover, 2021).

It is worth mentioning that the 1999 manual published by the European Union, being one of the friendliest regions for cycling in the world, is leaps and bounds ahead of its time compared to less cycling friendlier regions since it already considered both subjective and objective factors in policy-making that aims to integrate cycling as a means of transportation in European cities. Objective factors included in the manual include measurable and tangible interventions such as speed in main roads, topographical features, climate, and other aspects of the built environment. Subjective factors include the image of the bicycle as well as cyclists as road users, social acceptability of cycling, feelings of security and insecurity when engaging in cycling as an activity and as a form of transportation, and the recognition of the bicycle as a means of transportation for adults (Dekoster and Schollaert, 1999).

In addition, maps were also mentioned as important tools that will not only aid urban planners and policy makers but cyclists as well since maps effectively capture objective facets of urban spaces such as roads, bicycle lanes, and other important infrastructures for cycling (Dekoster and Schollaert, 1999). And with the developments in cartography especially the advent of counter-cartography and countermapping, it is now also capable of capturing, storing, and representing subjective aspects of everyday life as well as individual and collective experiences of cyclists.

Countermapping through Cycling

The importance of both objective and subjective factors in planning and crafting policies for cycling safety as well as in mapping safe spaces for cycling necessitates at least a theoretical understanding of the cycling experience, culture and tradition. A good framework being used by scholars to explore cycling is practice theory. In the study by Rachel Aldred and Katrina Jungnickel entitled "Why culture matters for transportation policy: the case of cycling in the UK", culture, commonly defined as an overall way of life, is not seen as something determinant but rather suggestive providing and presenting essential norms, tools, and guidelines for people to follow or unfollow in their everyday lives.

Practice is the way by which people exercise their agencies and engage with the various meanings and norms presented to us in a day to day basis. Individuals are therefore active agents who are constantly engaged in negotiating socio-cultural aspects of life. The degree of participation through practice however is determined by three factors namely meanings, competences, and materials (Aldred and Jungnickel, 2014).

Meanings refer to the significance of a certain activity or cultural component that is being engaged into. Competencies, on the other hand, refer to the ability of individual to participate hence the higher the competency of an individual the more significant is her/his involvement in the said activity. Finally materials speak of the material aspect of engaging in certain sociocultural activities such as money and access to different types of technology (Aldred and Jungnickel, 2014).

Applying this framework to cycling , various cyclists and road users attach different meanings to cycling as an activity hence the creation of unique cycling communities with their own subcultures and traditions. Different types of cycling communities and cultures therefore have different views on cycling safety. This is

further mediated by the competency of cyclists wherein as beginners might view cycling in normal road conditions as a daunting and hazardous task, more experienced cyclists may have a higher tolerance and lower risk perception when traversing through roads. Finally, the perception of cycling as an activity and cycling safety is influenced by the materials involved particularly the bicycle. Certain bicycle designs can significantly change a cyclists experience of safety. For example, road bikes cannot be ridden across rough and off-road trails while mountain bikes can be ridden virtually anywhere provided that one has good components for off- roading purposes. In urban settings however, road bike designs are faster and can cope better with highway speeds as compared to mountain bikes.

The benefits of having a theoretical understanding of cycling as an activity can be manifested on inclusive cycling policies as well as on new and innovative ways of mapping safe spaces for cyclists which goes beyond the built environment. Katie Headrick Taylor and Roger Hall's (2013) study for example used the bicycle as a means of countermapping the city with the core assumption that different types of interactions, engagements, and activities happen at different scales in the mundane process of physical mobility especially during the period of movement from location A to B. Biking in this sense is a way of countermapping as residents collect community data through cycling further using the activity as a means of "ground truthing issues" and problems in their respective localities. Countermapping through cycling is therefore focused on representing personal narratives through cycling rather than simply plotting built environments for cycling making way to more creative and unconventional methods of mapping urban spaces (Perkins and Thomson, 2005).

The literature and framework cited in this study provide important insights for cycling safety and safe spaces for cycling. However, it is equally important to note

that these studies are based on the experience of other countries, mostly western ones. Authors recognize this particular limit to their analysis challenging scholars from different countries who are interested in the topic to also contextualize and understand cycling through their own community, culture, and individual and collective experiences. Rethinking cycling safety and safe spaces for cycling in the Philippines therefore entail at least a discussion of Filipino cycling community, culture, and tradition and how it evolved through time to be able to produce proper and context-specific laws as well as maps that are relatable and beneficial to all types of Filipino cyclists.

Understanding the Filipino Cycling Culture Traditions

Cycling in the Philippines is an activity that is even older than more popular sporting events and activities such as basketball and volleyball. The bicycle as a transportation technology was introduced to the country during the late 19th century following the invention of the safety bicycle design and the consequent bicycle boom in Europe and the United States of America (Bongen, 1996). As a form of transportation, it was highly regulated especially in the City of Manila wherein cyclists were required to have a license and bicycles needed to have lights and safety bells (MBCM, 1902; MBCM, 1904, MBCM, 1905). It was until the 1910's that cycling was demoted, at least by American planners, from a form of public transportation to just a form of glorified walking (West, 1916).

As a sport, the racing aspect of cycling also came with the technology and there are accounts of races being held in Manila even as early as the 1890's. An interesting article written by Ambeth Ocampo for example focused on Marcelo H. Del Pilar and Jose Rizal's love for the bicycle. Rizal who was then in Dapitan in 1895 wrote a letter to his mother and asked her to buy him a bicycle. He also instructed them

to ask Pepe Leyba, a family friend, for help in choosing the bicycle. Leyba was a resident of Pampanga who allegedly won the *Carera de Bicicletas* of Bacolor in 1894 where he won a ribbon that was painted by Juan Luna (Ocampo, 2020). A similar account of a bicycle race in Manila in 1894 was mentioned by Joseph Earle Stevens (1899), an American Industrialist who stayed in the Philippines from 1893 to 1896, in his memoir entitled "Yesterdays in the Philippines."

By the time of the Americans, the sporting aspect of the bicycle was set aside as baseball, basketball, and athletics were prioritized as a cultural component of American imperialism in the country (England, 1922; Robert, 2010). Cycling clubs played a huge part in the process of keeping cycling relevant as a sport during this period. Clubs such as the *Club Ciclista* for example represented the country in races such as cycling events in the 1921 Far Eastern Olympic Games (PM, 1921). During the post war years, cycling clubs and enthusiasts were also responsible for the founding and organization of the biggest professional cycling race in the country, the Tour of Luzon, in 1955 before corporations took notice and sponsored the event until its second iteration when Marlboro stepped in as the main sponsor effectively changing the name to the Marlboro Tour in 1979 (Pawilen, 2019).

Today, while the cycling's reputation as a cheap and eco-friendly way of moving around plays an important role in its continuing relevance as a form of transportation and livelihood, cycling clubs and groups, especially those biking for leisure are still largely responsible for its enduring significance as a physical activity, a hobby, and a sport. Studying cycling culture and tradition should therefore look not only at those who are engaged in bicycles as form of transportation but also those who are into biking as a form of leisure, physical activity, interest, and hobby.

To further understand the composition of the cycling community in the Philippines, I created a Venn diagram based on how groups utilize the bicycle. First are those who use bicycles for transportation to work or for other forms of livelihood referred to by the Filipino cycling community as bike-to-work (BTW). Second are enthusiasts (E) or those who use bicycles and cycling as a form of physical activity or hobby. The third and final group is composed of professional cyclists (PC) or athletes who engage in the sport and competition aspect of cycling.

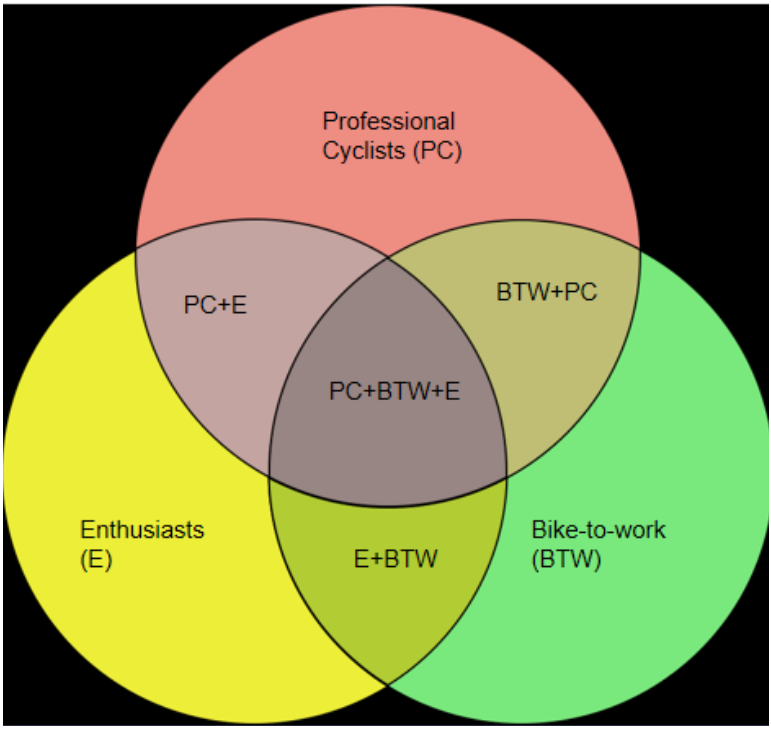

FIG. 1. *Venn diagram of the different types of cyclists based on how they use the bicycle in different activities. This was based on my personal and online engagements with various cycling groups being a mountain and road biker myself dor the past 17 years. I presented this diagram in a Geography Webbynar sponsored by the Depaartment of Geography, University of the Philippines Diliman and the Philippine Geographical Society last March 24, 2021.*

A Venn diagram is appropriate in representing the composition of the cycling community in the country since it also takes into consideration overlaps in bike utility and interest. For example, there are enthusiasts who also use their bicycles to work, bike-to-work individuals who also consider biking as a hobby, professionals who use their bicycles to other economic ventures other than for sports as well as professional cyclists who also consider biking as a hobby other than a form of organized competition.

The Venn diagram however does not take into consideration the level of competency of cyclists. While professional cyclists understandably are the most competent in terms of skills, talent, and endurance, there are enthusiasts that are as equally competent experience-wise especially those who have been cycling for a long time. Biking to work everyday also does not guarantee all around competence especially those who are only accustomed to riding their route to and from work. The Venn diagram also does not take into consideration the variety of routes taken by cyclists, the frequency of rides of each cycling group, the distance covered, as well as other important issues such as the issue of gender and discrimination within the community.

As such, this basic representation of the composition of the cycling community in the Philippines signify the diversity of cycling groups hence diversity of biking activities and the possibility of multiple perspectives regarding cycling safety and safe spaces for cycling. More competent cyclists may engage in more strenuous activities and view hazards differently since they have the experience and necessary materials to deal with the stresses of different routes of varying difficulties. Less experienced and equipped cyclists on the other hand may identify significantly more hazards and threats as they engage in the activity even if they are traversing shorter routes.

The Filipino cycling community gets even more diverse when one considers communities that are based on bicycle types. Subcultures within the cycling community tend to form around the bicycle and the quality of ride that it provides. The most common division of bicycle cultures is premised on the Mountain and Road bicycles. These two however are further divided into sub-specializations such as Cross Country, Downhill, Enduro, and Fat Bike for Mountain bikes and Time Trial, Cyclocross/Gravel Bike, and track cycling/fixie for Road bikes. Folding bike is another cycling community that has been gaining traction and more members in the last few years.

In my case, I started riding the mountain bike way back when I was in first year high school, 2006, where I became a member of the Metro Candon Biker's Association (MCBA) in Ilocos Sur. Most of the members at the time used mountain bikes since it was then harder to build a road bike in our province and it was also relatively cheaper to maintain. As an all-around bicycle, the mountain bike was easy to navigate around paved roads and off-road tracks hence allowing us to access more places. Its design is also ergonomically more friendly compared to the racing position in road bikes that might be too strenuous for beginners or casual cyclists.

In a report by iprice in 2020, google search volume for bicycles in the Philippines increased by 163% from the period January to June compared to that of 2019. Of the 1,477,860 peak search volume for bicycles, the Mountain bike accounted for 43% while the road bike only accounted for 25% signifying the continuing primacy of mountain bikes as the preferred type of bicycle among Filipinos. Other types of bicycles such as the BMX and folding bikes account for the other 32% of bicycle related searches (Romualdez, 2020).

It was until 2019 when I bought my first road bike and it radically changed how I looked at road conditions since road bicycles have wheels that are narrower and better suited for the tarmac. It therefore also limited the places that I can visit as compared to my mountain bike where off-road side trips are always an option. I also bought a folding bike in 2017 and it also entailed a different set of skills since the design of the bicycle is way different from mountain bikes thus altering your balance with its lower center of gravity and ergonomics.

Having at least a recognition of the diversity of cyclists and cycling cultures in the country may help aid in improving how policies are crafted. Since 2011, there have been nine Senate and House Bills about cycling safety and the promotion of cycling as an alternative form of transportation. The bills are enumerated in the table below.

Bill Number	Title	Year Filed
Senate Bill No. 2688	Bicycle Act of 2011	2011
Senate Bill No. 2789	An Act to promote the use of bicycles as alternative modes of transportation and establish bike-friendly communities	2011
Senate Bill No. 2924	Bicycle Commuters Incentives Act	2013
House Bill No. 263	An Act to establish and integrate bicycle lanes in the Philippines Transportation System (2016)	2016
House Bill No. 174	An Act for the creation of Local Bikeways Office (LBO) establishing infrastructure in relation thereto and providing for bicycle rights and other purposes.	2016
Senate Bill No. 66	Promoting sustainable and alternative modes of transportation and other mobility options to improve air quality, increase efficiency, reduce congestion, and contribute to positive health	2019

	impacts in our society	
Senate Bill No. 285	An Act promoting and recognizing bicycles as an Alternative mode of transportation, and for other purposes	2019
Senate Bill No. 1518	An Act establishing a network of pop-up bicycle lanes and emergency pathways for use during the duration of the Covid-19 pandemic, and for other purposes	2020
House Bill No. 8598	Establishing a safe pathways network of bicycle lanes and slow streets and for other purposes	2021

TABLE 1. *House and Senate bills that are still pending in Congress and the Senate. Bill numbers and titles were retrieved from government websites such as www.congress.gov and legacy.senate.gov.ph*

A quick review of the said bills show a tendency to define cyclists as one homogenous community. This is evident with SB No.'s 2789 and 2688 wherein cyclists are merely defined as persons riding the bicycle. SB No.'s 2924, 263, and 1518 on the other hand do not even have a definition of a cyclist which is interesting since these are the groups/individuals being protected by these policies in the first place. While there is nothing wrong with the simple definition of a cyclist, and that it may be further defined in the Implementing Rules and Regulation once these policies are implemented, failure to take diversity into account may lead to solutions and programs that may not be truly inclusive of the needs of the cycling community as a whole.

For instance, all of these laws focus on creating build environments such as bike lanes especially in cities giving the impression that cycling safety is just a function of road safety in urban spaces. While this may greatly benefit city commuters and BTW's, E's and PC's may not be entirely protected by such laws since these types of cyclists have the competence and the resources to engage in inter-provincial

biking activities. This begs the question: how do laws take these inter-provincial trips of E's and PC's into consideration? Is cycling safety an urban problem only?

One way of promoting cycling safety beyond urban spaces is the increase in educational programs regarding the prospect of sharing the road, as stated in some of the mentioned bills. However, such programs should not be limited to orienting the cycling community alone with regard to their responsibilities and rights but also to different institutions involved in transportation and urban planning as well as private vehicle owners especially when they undergo examinations for the acquisition of driver's license. So far, the LTO theoretical driving course only encourage drivers to share the road but there are no specific guidelines on dealing with non-motorized road users (LTO, 2021). On the other hand, given the state of road infrastructure and public transportation in the country as well as the problem of congested traffic in Metro Manila, would it be possible to elevate discussions on implementing bicycle lanes from city networks to national networks of bicycle lanes and cycling friendly infrastructure?

Understanding the existing cycling culture, the multiplicity of activities, meanings, perspectives, the competencies, as well as the materials involved in cycling should improve the crafting and implementation of policies since it adds important context-based and community factors in designing bike friendly infrastructures and safe spaces for cycling. It equally changes the way cycling spaces are mapped beyond identifying hazards, bike lanes, and in-city routes. The next section is dedicated on identifying potential mapping opportunities building from the OpenStreet map application developed by the Filipino cycling community in 2021.

Countermapping through Cycling: Building on the OpenStreet Map Application

Two OSM's for cyclists were launched in 2021 namely Mikko Tamura, Life Cycles, and MNL Moves' OSM that was created through Canvis and Jesus Israel Jr.s' bike lane map on Google My Maps. As OSM applications, both have the objective of democratizing cycling safety data, providing easy access to hazard details, and encouraging cyclists to contribute in mapping hazards in different routes (Gutierrez, 2021). OSMs in this regard are very useful since they are aimed at gathering spatial data through online "crowd-sourcing" making it a viable venue for shared spatial knowledge (Haklay and Weber, 2008).

Tamura's OSM is pretty easy and straightforward to use in consideration of cyclists who are not really familiar with coding data in maps. It has a location function that can be focused on any point in the Philippines hence a rather comprehensive coverage of the whole country enabling cyclists from all over the Islands to participate in mapping. Contributors are only required to use points and lines to denote the location of bike lanes and other important biking facilities such as bike parking, shops, and repair stations. A separate map is dedicated to mapping hazards such as obstructions (Object, Illegal parking, and others), poor lighting conditions, poor road conditions, accidents, construction, and flooding. They also have the option to add further details through photographs though this function is reserved for biking infrastructures and shops. Information about hazards can only be specified through text description. Israel's Google My Maps is essentially the same where cyclists may view the condition of various bike lanes especially those in Metro Manila. Bike lanes are ranked as usable, moderately usable, and almost unusable.

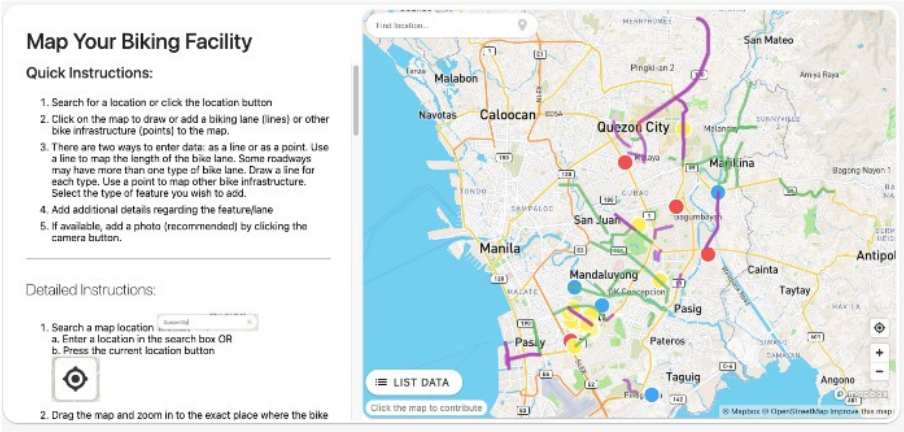

FIG. 2. *A screen capture of the interface of Tamura, LifeCycles, and MNL Moves' OSM through Canvis (Gutierrez, 2021).*

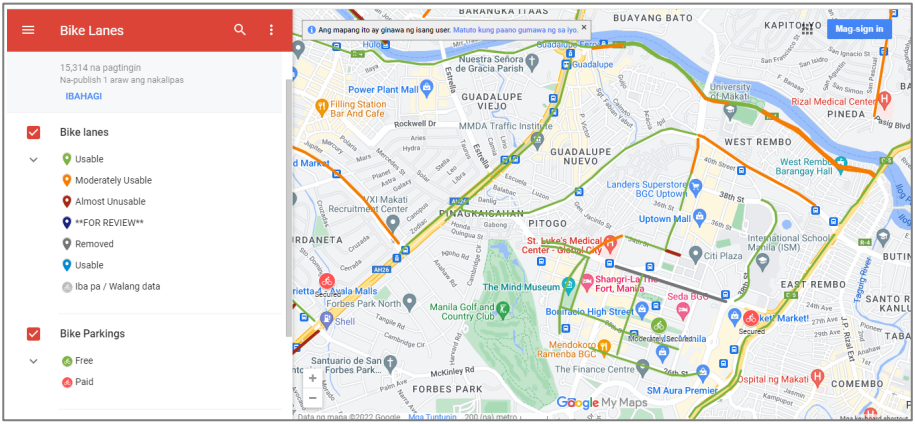

FIG. 3. *A screen capture of the interface of Israel's Google Map where bike lanes are rated as usable (green line), moderately usable (orange line), and almost unusable (red line) (Screen capture by the author)*

As noble as the objective of these OSM's may be, it is undeniable that there are still much to be desired in terms of hazard data that can be mapped. For instance, drawing bike lanes can be rated not only in terms of type and usability but also on its quality to cater to different types of bikes in certain conditions. Mountain bikes

can pretty much navigate any type of terrain under any type of conditions, however, there are bike lane designs that are harder to navigate using road bikes and bicycles that have thinner wheels especially during wet conditions. For example, one of the biking lanes that I frequent in Quezon City is Kalayaan Avenue wherein the bike lanes are painted. In rainy or wet conditions, painted bike lanes are more hazardous since they are smoother and provide less traction. Such conditional ways of mapping can be extremely beneficial especially to cyclists who are riding different types of bikes.

Factors of continuity and competence can also be considered in mapping bike lanes. In Tamura's OSM for instance, the bike lane in commonwealth is mapped as one continuum when there are a lot of intersections and discontinuities in the bike lane in the area especially towards the Northern portion of the highway near LITEX and Sandiganbayan. It also does not consider the topographical feature of the route which involves small ascending sections that might be too hard for beginner cyclists. Such data will be extremely helpful for cyclists who want to be informed about the hazards in various routes.

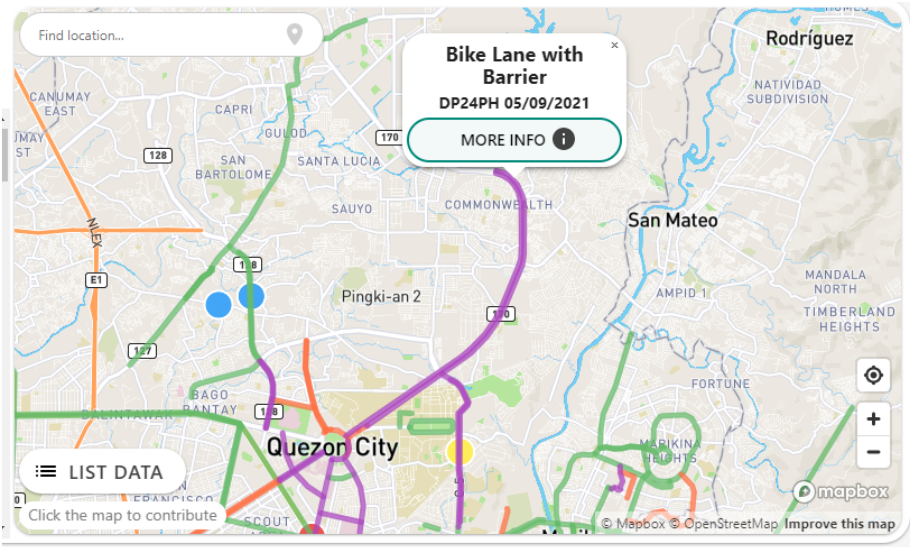

FIG. 4. *A screen capture of the Tamura OSM. Commonwealth avenue is tagged as having a bike lane with barrier traversing the whole avenue (Screen capture by the author).*

Indeed, even with the idea of democratizing spatial data, there is a need to continuously assess and improve on mapping features in OSM as well as the quality data being encoded since not all participants in OSM are necessarily experts in the geo-spatial sciences (Bassiri, Jackson, and Zhang, 2016). In addition, one of the ways to gauge the effectiveness and success of OSMs is on the degree of participation and access of the target population (Sehra, Singh, and Singh, 2013). In Tamura's OSM for example, there is a huge discrepancy in participation in the bike lane map and the hazard map wherein there are 188 data entries for the bike lane map since 2021 compared to only three in the hazard map. A quick scan of the two OSMs also show that despite having a country-wide coverage, contributors are still largely coming from Manila and Southern Luzon.

One of the possible explanations on this low turnout in participation from the cycling community is on the popularity of another mapping application, Strava,

that serves as a personal tracker and a social media platform for endurance athletes and individuals. It serves both as a way of recording and mapping endurance activities, and also a means to socialize with other endurance athletes and individuals by adding a competitive dimension through comparing times and giving individual and community rewards to the best individual records on certain routes (Hall, 2022). As such, Strava is a fitness-oriented application and not really a hazard map unless updates to the application is implemented in the future. To ensure continuous participation from the cycling community to hazard and bicycle safety oriented OSMs, on the other hand, it is apparent that greater efforts to communicate, educate, and promote these technologies and applications are needed.

Additionally, there is so much potential for these OSMs to be further developed especially in mapping individual and collective experiences. Putting the discussion on the Filipino cycling culture and traditions into consideration, OSMs can be specified further to cater to different types of cyclists since they have different cycling experiences, meanings, competencies, and materials. OSMs specified for BTWs, Es, and PCs can be created to avoid confusions in terms of routes and hazard perceptions. This also takes into consideration long distance rides that are typical for Es and PCs where they go beyond municipal and provincial boundaries to reach popular destinations. In doing so, planners, policy-makers, and mappers may acquire data and valuable insights on the extent of cycling activity in the country as well as on how different types of cyclists experience safety and hazards during their respective cycling ventures and engagements.

Speaking of long distance rides, mappers can also focus on identifying popular routes frequented by cyclists rather than simply identifying the location and condition of bike lanes within urban spaces. Since there is a lack of bike lane

networks in the country especially in Metro Manila where bike lanes are still fragmented depending on LGU policies, most cycling activities still happen on highways and shared with motorized road users.

This is particularly true with Es and PCs who often go beyond Metro Manila to tackle scenic and challenging routes fit for their level of competency. The cycling activity of Es and PCs actually signify the fact that cycling does not only happen within urban spaces but also beyond and towards rural areas thus the importance of taking this into account in policies as well.

Popular cycling routes for Es and PCs in particular are locations with imposing climbs such as Tagaytay, Baguio, and Antipolo. Es and PCs also bike the so-called cycling loops or routes that go around a particular area and then circling back to a cyclist's starting point from a different route. Examples of cycling loops are Laguna de Bay loop, a gruelling 200+ kilometer ride (depending on your point of origin) around provinces and highways surrounding Laguna de Bay, the Taal-Lake loop which usually starts and ends in the scenic City of Tagaytay, the Cavite-Batangas loop with the Kaybiang Tunnel as a obligatory stop then traversing the roads of Nasugbu, Batangas, and the Sierra Madre Loop which is known for its hard climbs along the MaRiLaQue (Manila-Rizal-Laguna-Quezon) highway.

As mentioned earlier, mapping narratives over the typical built environments is one of the main focus of countermapping through cycling. One of the ways by which this can be achieved is through integrating narratives in maps. The OSM's function that allows texts and pictures is a useful feature that allows such additions. Another method that I explored in a class in counter-cartography is the identification of a narrative-domain.

As an enthusiast of the sport for the past 17 years, it is my personal experience that cycling as a hobby is more than just a point A to point B affair. Cycling rides

often entail off-road tracks to visit unpopular but scenic spots that cannot be accessed through motorized vehicles. Going to a certain destination multiple times also entails the use of various alternative routes depending on group preference. A prime example is Tagaytay wherein it can be accessed through at least 6 major routes and a few minor roads thus the possibility of having multiple experiences for one destination alone.

One of the ways to take this into account in mapping is a thematic clustering of narratives rather than the simple enumeration of experiences through points and lines. To accomplish this, individuals or groups may look into their favorite biking destinations and linking them in a map to create a destination-based narrative domain. This domain represents a creative approximation and representation of their biking range as individuals or as a collective hence a useful space where they can integrate their narratives and personal experiences.

Below is an example of narrative domain map based on my favorite destinations in Southern Luzon. The domain of course is centered on my current address in Los Baños, Laguna as a starting point. The red area represents my long ride domain or rides that take about 7 hours or more while the blue area represents my short ride domain or those that take less than 7 hours.

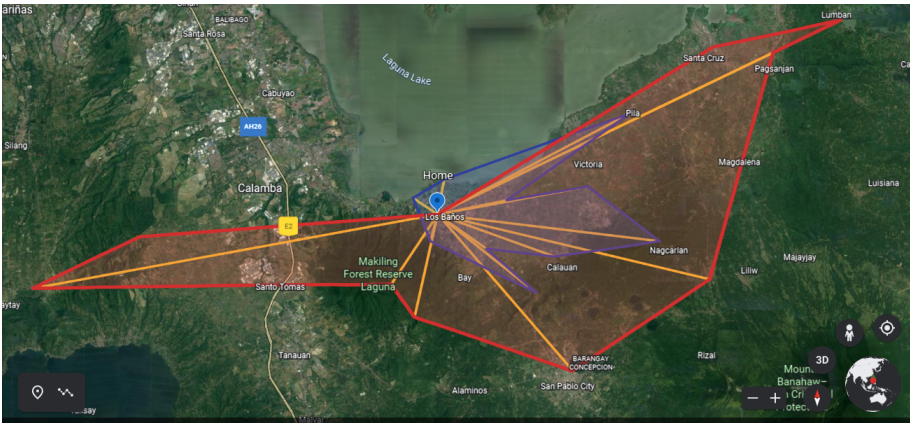

FIG. 5. *Countermapping project that I submitted to a Geography class in 2022. Google Earth was used as a mapping tool*

With my narrative domain in place, I now have a new way of representing my cycling activity in a map that is aesthetically interesting and engaging since it does not follow the typical point A to point B maps that can be found in cycling OSMs and fitness applications like Strada. To illustrate, the image below integrates some of my personal riding data from Strava to my narrative domain map.

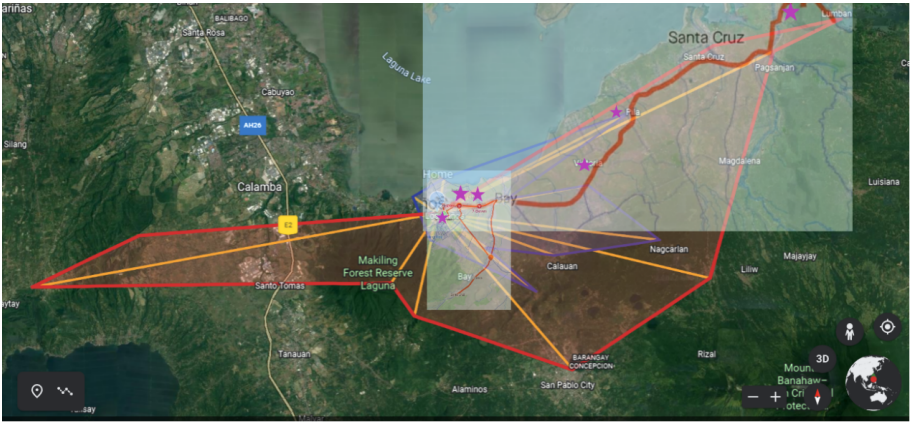

FIG. 6. *A layered integration of some of my riding data from Strava which are represented through points and lines into my location-based narrative domain. The stars represent the locations of off-route activities (stop-overs and side trips for photo opportunity scenes) that I usually do when traversing said routes. Mappers can also use other elements other than points such as photographs or post-its to enhance the integration of narratives to the domain. Google Earth was used as a mapping tool in this project.*

This is also applicable in determining a certain group's collective narrative domain wherein such creative and counter-cartographic interventions might pique the interest of cyclist to further participate in mapping. It may however be trickier especially for those who are engaged in really long distance rides or what Filipino cyclists commonly refer to as century rides meaning their routes are never below the 100-kilometer mark. Finding solutions to mapping these narratives is not entirely impossible with OSM as a technological innovation and the rise of counter-cartography as a methodological and theoretical framework for mapping.

Conclusion

This paper discussed the importance of integrating cycling culture, tradition, and perception in the creation of policies and maps relating to safe spaces for cycling and cycling safety. As highlighted in various studies and guidelines in designing safe spaces for cyclists, understanding the risk perception and the ways by which people engage and negotiate road conditions is equally as important as, and complementary to, the establishment of bicycle-friendly infrastructure. Using practice theory as a framework, risk and safety perceptions are mediated by the material condition, competency, and the meaning attached by cyclists to cycling as an activity. This adds depth and context-specific elements to policies as it takes into consideration the diversity of cycling perspectives, groups, and activities found in a certain area. In the case of the Philippines, bicycle utility is not just premised on basic transportation but also as a hobby, physical activity, and a sport

hence the existence of cycling groups, cultures, and activities that go beyond moving from point A to point B and also beyond the limits of urban spaces.

The development of OSMs as a mapping technology also augments this cultural turn in looking at safe spaces for cycling and cycling safety as it allows for the democratization of data and the participation of the cycling community in mapping hazards as well as their individual and collective experiences. Be that as it may, OSMs are not error-free and there are certain realities in the ground that are not properly represented through these maps. Continuous improvements and "ground-truthing" is therefore an important aspect of using OSMs as well as finding innovative and creative ways by which to represent spatial data to encourage the greater participation of the cycling community.

Such insights in policy-making and mapping will be important in the transition towards the "New Normal" and the quest for more bicycle-friendly spaces in the Philippines.

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